

DEPARTMENT OF COMMERCE
CIVIL AERONAUTICS ADMINISTRATION

A-649
Revision 1
BEECH
D17S (Army UC-43,
UC-43B, Navy GB-1,
GB-2)
SD17S

April 15, 1996

AIRCRAFT SPECIFICATION NO. A-649

Manufacturer	Raytheon Aircraft Company 9709 E. Central Wichita, KS 67201
--------------	---

I- Model D17S (Army UC-43, UC-43B; Navy GB-1, GB-2), 5 PCLB, Approved July 16, 1937;
Model SD17S, 5 PCSB, Approved September 1, 1937.

See NOTE 3 for modifications for conversion of military models. Model D17S same as D17R, TC 638, and D17A, TC 713, except for engine installation. Model SD17S same as D17S except for landing gear.

Engine	P & W Wasp Jr. SB with one 4 1/2N and one 9N damper. (See Item 316 for optional engines).
Fuel	80 min. octane aviation gasoline for continuous and take-off rating of 400 hp. 87 min. octane aviation gasoline for take-off rating of 450 hp. When 87 octane fuel is used, in order to utilize 450 hp for take-off one fuselage tank filler must be marked 87 octane minimum. Tank selector valve placard then should designate the fuselage tank and state that 87 octane must be used for take-off.
Engine limits	Maximum continuous (Sea level) 34.5 in. Hg., 2200 rpm (400 hp) (Straightline manifold pressure variation with altitude to 5000 ft.) 33.5 in. Hg., 2200 rpm (400 hp) Take-off (one minute) 34.5 in. Hg., 2200 rpm (400 hp) 36.5 in. Hg., 2300 rpm (450 hp)
Airspeed limits (T.I.A.S.)	Landplane - Level flight or climb 211 mph Glide or dive 240 mph Flaps extended 115 mph Seaplane - Level flight or climb 172 mph Glide or dive 209 mph Flaps extended 115 mph
C.G. range	Landplane - (+16.4) to (+26.0) Serial Nos. 425 and up are eligible as landplane with rear C.G. limit of (+27)(25.2% MAC). Serial Nos. below 425 also eligible for this rear C.G. limit when elevator trim tabs with a rounded nose section (Dwg. D176111) are installed. Seaplane - (+19.1) to (+27.7)
Datum	Lower wing leading edge.
Leveling means	Airplane is level when stagger (horizontal distance between wing trailing edges near fuselage) is 25.6 in. Army UC-43, Navy GB-2 airplanes have leveling lugs just inside baggage compartment doors.
Maximum weight	Landplane - 4250 lbs. Seaplane - 4650 lbs.
No. seats	5 (two at +18 and three at +62)
Maximum baggage	125 lbs. (+88)

Page No.	1	2	3	4	5
Rev. No.	1	-	-	-	-

Fuel capacity	102 gals. (One fuselage tank, 29 gals. (+32); one fuselage tank, 49 gals. (+55); one lower right wing tank, 24 gals. (+24)) (See Items 116, 205 and 314 for optional fuel tanks). Fuel placard required: "Use fuselage tank for take-off and landing. Fill fuselage tank(s) before filling wing tank(s). Use wing tank(s) before using fuselage tank(s)."																														
Oil capacity	6 1/2 gals. (-17)																														
Control surface movements	<table border="0"> <tr> <td>Elevators</td> <td>30°</td> <td>up</td> <td>28°</td> <td>down</td> </tr> <tr> <td>Elevator tab</td> <td>14.5°</td> <td>up</td> <td>14.5°</td> <td>down</td> </tr> <tr> <td>Ailerons</td> <td>33°</td> <td>up</td> <td>25°</td> <td>down</td> </tr> <tr> <td>Rudder</td> <td>28°</td> <td>right</td> <td>28°</td> <td>left</td> </tr> <tr> <td>Rudder tab</td> <td>20°</td> <td>right</td> <td>20°</td> <td>left</td> </tr> <tr> <td>Flaps</td> <td>43°</td> <td>down</td> <td></td> <td></td> </tr> </table>	Elevators	30°	up	28°	down	Elevator tab	14.5°	up	14.5°	down	Ailerons	33°	up	25°	down	Rudder	28°	right	28°	left	Rudder tab	20°	right	20°	left	Flaps	43°	down		
Elevators	30°	up	28°	down																											
Elevator tab	14.5°	up	14.5°	down																											
Ailerons	33°	up	25°	down																											
Rudder	28°	right	28°	left																											
Rudder tab	20°	right	20°	left																											
Flaps	43°	down																													
Serial Nos. eligible	136 and up and all AAF and Navy Nos. (Use Manufacturer's number, if available).																														
Required equipment	Landplane - Items 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 116(a) or (b). Seaplane - Items 101, 102, 103, 104, 108, 109, 110, 111, 113, 114, 116(a) or (b), 151, 152 and 153.																														

Specifications Pertinent to All Models

Certification basis	Type Certificate No. 649 (Aero. Bulletin 7A requirements)
Production basis	None. Prior to original certification of each aircraft subsequent to March 25, 1947, must satisfactorily pass: (a) An inspection for workmanship, materials and conformity before any covering, metal priming or final finish is applied. All woodwork may be varnished. (b) A final inspection of the completed aircraft. (c) A check of the flight characteristics.
Export eligibility	Eligible for export to all countries except as follows subject to the provisions of ASR 312 (MOP 2-4 contains the same information): Canada - Landplane and Seaplane eligible. Skiplane not eligible. However, structure complies with Canadian requirements for ski gear when Item 310 is installed. Maximum pedestal height is 17 inches. Tread is same as landplane.

Equipment: A plus (+) or minus (-) sign preceding the weight of an item indicates net weight change when that item is installed.

Propellers and Propeller Accessories

114. Propellers - Hamilton Std. hub 2D30 with	
(a) Blades 6095A-15, -16 or 6167A-15, -16 (Pitch settings, Low 11°, high 26°)	157 lbs. (-59)
or (b) Blades 6101A-21T, -22T Diameter 8'3-1/8" max., 8'7/8" min.	163 lbs. (-59)
218. Constant speed governor (Ham. Std. Type 1A2)	6 lbs. (-26)
224. Propeller spinner (Spartan) (Dwg. I-179002)	10 1/2 lbs. (-59)

Engines and Engine Accessories - Fuel and Oil Systems

101. Engine ring cowling (NACA type)	39 lbs. (-44)
102. Carburetor air heater (muff type)	6 lbs. (-30)
103. Starter (Eclipse E80 or Type 397, Model 13)	20 lbs. (-26)

109. Oil radiators
 (a) One radiator (Dwg. D17S9850) with NACA cowl 28-7/8" long (Horizontal centerline) 8 lbs. (-32)
 (b) Two radiators (Dwg. D17R9850) with NACA cowl 29-3/16" long (horizontal centerline) 8 lbs. ea. (-32, -34)
 (c) One radiator (Dwg. 94-189850) 12 lbs. (-26)
110. Wobble pump (Type D-2) 4 lbs. (+12)
111. Engine driven fuel pump (Pesco 400 series; Romec RD-3080, -4190) 5 lbs. (-29)
115. Carburetor, cold air ducts and filters 11 lbs. (-48)
116. Fuselage fuel tanks
 (a) 29 gallon tank 17 lbs. (+32)
 (b) 49 gallon tank 23 lbs. (+55)
204. Oil tank - 8, 9 1/2 or 11 gals.
205. Auxiliary fuel tanks
 (a) One 23 or 24 gal. tank, upper right wing 20 lbs. (+47)
 (b) One 23 or 24 gal. tank, upper left wing 20 lbs. (+47)
 When upper wing tanks are installed add the following to fuel placard: "Fill lower wing tank before filling upper wing tanks. Use upper wing tanks before using lower wing tanks."
 (c) One 23 or 24 gal. tank, lower left wing 20 lbs. (+24)
 (May replace lower right wing tank and/or Item 116(a) provided Item 116(b) is installed).
207. Ignition shielding (a) Breeze 15 lbs. (-45)
 (b) Packard 10 lbs. (-45)
219. Special oil drain and oil radiator by-pass valve 2.5 lbs. (-28)
220. Exhaust gas analyzer (Breeze or Cambridge) 5 lbs. (-8) or (-28)
314. 23 gal. fuel tank in lower right wing replacing 24 gal. tank Neglect weight change
316. Engine (must have one 4 1/2N and one 9N damper) Use act. wt. increase
 (a) P & W Wasp Jr. SB-2 (Limits same as SB)
 (b) P & W Wasp Jr. SB-3 (Limits same as SB)
 (c) P & W Wasp Jr. T1B2
 Limits
 Maximum continuous
 (Sea level 35 in. Hg., 2200 rpm (400 hp)
 (Straight line manifold pressure variation with altitude to 3800 ft.) 34 in. Hg., 2200 rpm (400 hp)
 Take-off (one minute)
 37.5 in. Hg., 2300 rpm (450 hp)
 (d) P & W Wasp Jr. T1B3 (Limits same as T1B2)
 (e) Military R-985-AN-4 (Limits same as SB)
 (f) Military R-985-AN-6 or -AN-6B (Limits same as SB)
 (g) Military R-985-AN-12 or -AN-12B (Limits same as SB)
 (h) Military R-985-AN-14B (Limits same as SB)
 (i) Military R-985-25 (Limits same as T1B2)
 (j) Military R-985-AN-1 or -AN-3 (Limits same as T1B2)

Landing Gear

106. 7.50-10 wheels (Goodyear 10 HBM) with 7.50-10 6-ply tires (wheel must be placarded for 6-ply tires) 75 lbs. (+5)
107. 10x3 tail wheel 5 lbs. (+211)
151. Edo WA-4665 floats with water rudders
223. Dual brake control installation +8 lbs. (-6)
305. Hand brakes (co-pilot) +2 lbs. (-8)
306. Hand operated parking brake 2 lbs. (-4)
307. Emergency wood landing skids (Dwg. E170140) 16 lbs. (+22)
308. Puncture proof tubes +8 lbs. (+5)
310. Skiplane landing gear (Dwgs. D17820 and D17840) +3 lbs. (+20)
311. 10 in. smooth contour tail wheel assembly with 6-ply tire +1 lbs. (+211)

Electrical Equipment

104. Generator 15 amp. (Eclipse LV-180)	15 lbs. (-24)
105. Battery (Exide 6TS-13-1)	36 lbs. (-21)or(+92)
112. Landing gear motor (Dumore D5, 40 amp. fuse reqd.)	9 lbs. (+6)
113. Flap motor (Dumore KL, 30 amp. fuse reqd.)	8 lbs. (+45)
201. Generator (a) 25 amp. (Eclipse D)	20 lbs. (-23)
(b) 50 amp. (Eclipse E)	25 lbs. (-23)
217. Landing lights (a) 1 or 2 (Hall A-6)	3.5 lbs. ea. (+35)
(b) 1 or 2 (Grimes ST-250)	3.5 lbs. ea. (+21)
(c) 1 or 2 (Grimes ST-1000 or ST-1220)	6 lbs. ea. (+25)
312. Flap motor (Dumore K special 4253 flexible drive) (30 amp. fuse required)	5 lbs. (+42)
313. Cannon plug (for electric starter)	3 lbs. (-2)or(-8)

Interior Equipment

108. Swing-over control column (See Item 301)	11 lbs. (+6)
202. Cabin heater (Muff type)	4 lbs. (-30)
203. Fire extinguisher (Pressure type)	
(a) Lux - 2 lbs.	12 lbs. (-12)
(b) Lux - 5 lbs.	21 lbs. (-12)
(c) Pyrene No. 56	17 lbs. (-12)
(d) Lux - 5 lbs. (Dwg. I-170555)	21 lbs. (+60)
(e) Ace	10 lbs. (-10)
(f) Walter Kidde - 5 lbs.	21 lbs. (-22)
206. Parachute flares	
(a) 3 - 1 1/2 minute (International MK-1)	18 lbs. (+78)or(+108)
(b) 1 or 2 - 3 minute (Wiley A-8)	18 lbs. ea. (+105)
(c) 4 - 1 1/2 minute (International MK-1)	24 lbs. (+80)or(+110)
208. Gold compartment (Dwg. I-17006) (Max. capacity 70 lbs. included in baggage allowance)	9 lbs. (+100)
211. Vacuum equipment	
(a) Pump (Pesco 194, Romec RD-2112 or ARO Equipment A-513-DA)	4 lbs. (-26)
(b) Venturi tubes	1 lbs. (-4)
213. Fuselage alterations for special-purpose equipment	
(a) Photographic version (Item 214) - Includes front and rear floor windows, camera and viewfinder wells, and change in location of rudder cables. (Dwgs. D17015 and D170160)	+13 lbs. (+33)
(b) Ambulance version (Item 215) - includes rear seat center support and litter floor attachments. (Dwgs. I-17073 and I-17077)	+2 lbs. (+53)
(c) Mailplane version (Item 216) - Includes rear seat center support and metal lined baggage compartment and right rear of cabin. (Dwgs. I-170812 and I-170813)	+15 lbs. (+73)
214. Photographic version (See Item 213(a))	
(a) Camera and viewfinder	110 lbs. max. (+51)
(b) Photographers stool (These items (a and b) may be installed after fuselage alterations (Item 213(a)) have been made, and standard rear seat, 31 lbs. (+67), camera and viewfinder cover plates, 3 lbs. (+51), have been removed.)	
(c) Oxygen tank installation	150 lbs. max. (+73)
215. Ambulance version (See Item 213(b))	
(a) Special right or left half rear seat (Dwg. I-17073) (may replace standard rear seat, 31 lbs. (+67), if fuselage alterations (Item 213(b)) have been made)	17 lbs. ea. (+67)
(b) First aid box installation	7 lbs. (+48)
(c) Ambulance litter and two safety belts (may be installed after fuselage alteration (Item 213 (b)) and removal of right half rear seat (a) and co-pilots seat 16 lbs. (+21)	14 lbs. (+42)

216. Mailplane version (See Item 213(c))	
(a) Same as 215(a) except Dwg. I-170812.	
(b) Removable front and inner sides of fwd. mail compartment (see (c))	10 lbs. (+52)
(c) Mail compartments and capacities:	
1. Front	200 lbs. max. (+54)
2. Rear	150 lbs. max. (+88)
222. Package drop (under baggage compartment)	+8 lbs. (+84)
301. Control column "T" type	No weight change
309. Folding back seat (may replace standard front seats)	16 lbs. (+21)
315. Utility case	4 lbs. (+77)

Miscellaneous (not listed above)

152. Auxiliary seaplane fin (Dwg. D17635)	5 lbs. (+220)
153. Water rudder control system	4 lbs. (+110)
212. Extra cabin door on right side	+5 lbs. (+42)
221. Ballast at tailpost (Dwg. I-17007)	25 lbs. max. (+224)
302. Metal cover for lower wing fuel tank	3 lbs. (+24)
304. Quick door release	1 lbs. (+36)
601. Metal cover for upper wing fuel tank	4 lbs. (+47)

NOTE 1. Current weight and balance report including list of equipment included in certificated weight empty, and loading instructions when necessary, must be in each aircraft at the time of original certification and at all times thereafter (except in the case of air carrier operators having an approved weight control system).

NOTE 2. Fuel restriction placard must state: "Use fuselage tank for take-off and landing. Fill Fuselage tank(s) before filling wing tanks. Use wing tank(s) before, using fuselage tank(s)." When upper wing fuel tanks are installed, add, "Fill lower wing tanks before filling upper wing tanks. Use upper wing tanks before using lower wing tanks."

NOTE 3. Army UC-43B and Navy GB-1 are identical to model D17S. Army UC-43 and Navy GB-2 are eligible for certification as model D17S when converted in accordance with Beech Commercial Modification Bulletin No. 40.

Each airplane must be weighted to determine its weight and balance and an approved loading chart or device must be installed.

Upon completion of the conversion to certificated status, the manufacturer's name plate containing the commercial model designation, serial number, and the date of manufacture shall be installed below the original name plate. The original or any succeeding name plate should not be removed from the aircraft.

--END--